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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
10/092,876	03/07/2002	Biing-Hwang Juang	5123-21	9962
75	90 02/03/2005		EXAM	INER
Eli Weiss, Esq.			RIVERO, MINERVA	
Cohen, Pontani	, Lieberman & Pavane			
Suite 1210			ART UNIT	PAPER NUMBER
551 Fifth Avenue			2655	
New York, NY 10176			DATE MAILED: 02/03/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)				
	10/092,876	JUANG ET AL.				
Office Action Summary	Examiner	Art Unit				
	Minerva Rivero	2655				
The MAILING DATE of this communication apperiod for Reply	pears on the cover sheet with the c	orrespondence address				
A SHORTENED STATUTORY PERIOD FOR REPL THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1. after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a rep - If NO period for reply is specified above, the maximum statutory period - Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailin earned patent term adjustment. See 37 CFR 1.704(b).	136(a). In no event, however, may a reply be timely within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from e, cause the application to become ABANDONE	nely filed s will be considered timely. the mailing date of this communication. D (35 U.S.C. § 133).				
Status						
1) Responsive to communication(s) filed on						
	s action is non-final.					
3) Since this application is in condition for allowa	·					
Disposition of Claims						
4) Claim(s) 1-17 is/are pending in the application 4a) Of the above claim(s) is/are withdra 5) Claim(s) is/are allowed. 6) Claim(s) 1-17 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/o	wn from consideration.					
Application Papers						
9) The specification is objected to by the Examine 10) The drawing(s) filed on 07 March 2002 is/are: Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Example 11.	a) accepted or b) objected to drawing(s) be held in abeyance. See tion is required if the drawing(s) is obj	e 37 CFR 1.85(a). ected to. See 37 CFR 1.121(d).				
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority application from the International Burea * See the attached detailed Office action for a list	ts have been received. ts have been received in Applicationity documents have been received u (PCT Rule 17.2(a)).	on No ed in this National Stage				
Attachment(s)						
 Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/07/02</u>. 	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal P 6) Other:					

Application/Control Number: 10/092,876

Art Unit: 2655

DETAILED ACTION

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Claim Objections

1. Claim 17 is objected to because of the following informalities: In claim 17, the term 'generated speech' has been interpreted by the examiner as 'generated speech characteristic', as anteceded in parent claim 16. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35
 U.S.C. 102 that form the basis for the rejections under this section made in this
 Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 8-12, 13 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Basu *et al.* (US Patent 6,594,629).

4. Regarding claims 1, 2, 8, 9, 12, 13 and 16-17 Basu *et al.* disclose a method, apparatus and article for controlling the operation of a speech recognition device, comprising elements for and steps of:

recording at least one frame of a video image of speech articulators of a user while the user is speaking (Col. 2, Lines 34-38; *camera*, *archival*, Col. 3, Lines 44-46);

recording acoustic properties of speech that occurs concurrent with the recording of the at least one video frame (*acoustic feature vectors*, Col. 6, Lines 7-12);

identifying acoustic properties of speech that would be expected to be generated by a condition of the speech articulators recorded in the at least one frame of the video image (*probability associated with the visual information and a probability associated with the corresponding audio information and weighting said probabilities*, Col. 14, Lines 51-56);

examining the video frames for a face (detecting face candidates, Col. 2, Lines 47-52);

examining the video frames that have a face for a change of the speech articulators of the face (Col. 2, Lines 54-58; *positions of articulators*, Col. 13, Lines 12-14);

comparing the identified acoustic properties of speech with the recorded acoustic properties to determine whether the speech of the recorded properties

emanated from the user (evaluating audio-only data based on video-only data, Col. 18, Lines 8-12) and

activating the speech recognition device when there is a match between the acoustic properties of speech which would be expected to be generated by the condition of the speech articulators recorded concurrent with the recording of the at least one video frame (searching the language module for acoustic units having highest probabilities, Col. 15, Lines 4-9; Col. 16, Lines 31-33 and 49-52; Col. 18, Lines 8-12).

- 5. Regarding claims 3 and 10, Basu *et al.* disclose maintaining the speech recognition device active for a preset time interval after being activated (*perform speech recognition during speech detection and none when silence is detected*, Col. 16, Line 64 Col. 17, Line 7).
- 6. Regarding claim 4, Basu *et al.* disclose maintaining the speech recognition device active beyond the end of the preset time interval upon obtaining a match between the acoustic properties of speech which would be expected to be generated by the condition of the speech articulators recorded in a subsequently recorded frame of a video image with the acoustic properties of speech recorded concurrent with the recording if the subsequently recorded video frame before the fixed period of time expires (Col. 2, Lines 6-10; Col. 6, Lines 18-19; *perform*

speech recognition during speech detection and none when silence is detected, Col. 16, Lines 49-52; eliminating 'junk' recognition and event detection, Col. 16, Line 64 – Col. 17, Line 7). Basu et al. disclose having the speech recognition device active during event detections, defined as an audio signal that has a high probability of having been produced by the speech articulator information provided by the video source, the probability measure being a result of a correlation analysis of the video and audio signals.

7. Regarding claims 5, 6 and 14, Basu et al. disclose

a camera is used to record the video image of the speech articulators of the user (Col. 5, Lines 29-42) and

a microphone is used to record the acquetic pr

a microphone is used to record the acoustic properties of speech of the user (Col. 5, Lines 29-42).

8. Regarding claim 11, Basu *et al.* further disclose deactivating the speech recognition device at the end of the preset time interval in the absence of the occurrence of a subsequent match between the identified acoustic properties of speech that occurred at the time that the video frame of a face having a change of speech articulators with the identified acoustic properties that would be expected to be generated concurrently with the video frame (Col. 16, Lines 49-52; *eliminating 'junk' recognition* and *event detection*, Col. 16, Line 64 – Col. 17,

Line 7). Basu *et al.* disclose having the speech recognition device deactivated during absence of events. Basu et al. define *event* as an audio signal that has a high probability of having been produced by the speech articulator information provided by the video source, the probability measure being a result of a correlation analysis of the video and audio signals.

Claim Rejections - 35 USC § 103

- 9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 10. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basu *et al.* (US Patent 6,594,629), as applied to claims 1 and 14 above, in view of Ford *et al.* (US Patent 6,711,535).

Regarding claims 7 and 15, Basu *et al.* do not expressly disclose but Ford *et al.* suggests a handheld device contains a microphone for recording the acoustic properties of speech of the user and a camera for recording the video

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image of speech articulators of the user (mobile computer, Col. 5, Lines 10-15

and 22-23; Col. 9, Line 2).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Basu *et al.* with a handheld device containing a microphone for recording the acoustic properties of speech of the user and a camera for recording the video image of speech articulators, as suggested by Ford *et al.*, in order to enable portability of the system.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Angell *et al.* (US Patent 6,513,003) disclose a system and method of synchronizing various data streams including video and speech, and the transcribing of the speech as a caption of the image.

Stork (US Patent 5,806,036) discloses a system that uses joint video and audio information for increasing accuracy in the speech recognition process.

Chen et al. (US Patent 6,185,529) disclose a system and method of relating mouth articulations with particular phonemes, and using the resultant parameters in real-time audio and video-based speech recognition.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (703) 605-4377. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 305-9508. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MR 1/27/2005

TALIVALDIS IVARS SMITS PRIMARY EXAMINER